

SOUTH TIPPERARY COUNTY COUNCIL



CARRICK ON SUIR

WASTEWATER DISCHARGE LICENCE

REGISTER NUMBER D0148-01

ANNUAL ENVIRONMENTAL REPORT

1st JANUARY 2012 to DECEMBER 31ST 2012

TABLE OF CONTENTS

	Page
1.0 INTRODUCTION and EXECUTIVE SUMMARY	4
1.1 Introduction	4
1.2 Executive Summary	4
2.0 MONITORING REPORTS SUMMARY	6
2.1 Summary report on Monthly Influent Monitoring	6
2.2 Discharges from the Agglomeration	8
2.3 Treatment Efficiency Report	10
2.4 Treatment Capacity Report	10
2.5 Ambient Monitoring Summary	11
2.6 Data Collection and Reporting Requirements under the UWWT Directive	12
2.6 Pollutant Release and Transfer Register	12
3.0 OPERATIONAL REPORTS SUMMARY	13
3.1 Complaints Summary	13
3.2 Reported Incidents Summary	13
4.0 INFRASTRUCTURAL ASSESSMENT & PROGRAMME OF IMPROVEMENTS	14
4.1 Storm Water Overflow Identification and Inspection Report	14
4.2 Report on progress and proposals to meet the Improvement Programme requirements	14
4.3 Sewer Integrity Risk Assessment	14
5.0 ENVIRONMENTAL LIABILITY & FINANCIAL PROVISIONS	15
5.1 Environmental Liabilities and Financial Charges	15
6.0 RISK BASED ASSESSMENTS (Priority Substances)	15
6.1 Priority Substances Assessment	15
7.0 CERTIFICATION & SIGN OFF	16

List of Tables		Page
Table 1	Wastewater treatment plant influent monitoring results.	6
Table 2	Flow weighted average Influent BOD calculation sheet.	7
Table 3	Effluent monitoring results	8
Table 4	Summary of the effluent monitoring and compliance	8
Table 5	Primary discharge point daily flow recordings	9
Table 6	Treatment efficiency report summary table	10
Table 7	Treatment capacity report summary table	10
Table 8	Ambient monitoring results – Upstream	11
Table 9	Ambient monitoring results – Downstream	11
Table 10	Ambient monitoring summary table	11
Table 11	Complaints summary	13
Table 12	Incidents summary	13
Table 13	Incident detail summary per EPA guidelines	13

1.0 INTRODUCTION and EXECUTIVE SUMMARY

1.1 Introduction

The Environmental Protection Agency on 20th December 2012 granted South Tipperary County Council a Wastewater Discharge Licence (Register No D0148-01) in respect of the agglomeration named Carrick-on-Suir. One of the provisions of the licence (Condition 6.8) is that the Council submit to the Agency at the end of the year an 'Annual Environmental Report' (AER) to provide a summary of activities relevant to the discharges for that year. This is the first Annual Environmental Report (AER) for the Carrick-on-Suir Wastewater Treatment Plant and includes the information specified in Schedule D of the licence.

This AER has been prepared in accordance with the Environmental Protection Agency (EPA) document: - "Guidance on the Preparation & Submission of the Annual Environmental report (AER) for Waste Water Discharge Licences for 2012"

The Carrick-on-Suir Wastewater Treatment Plant is located at Ballylynch Lower to the east of Carrick-on-Suir town and is designed to serve a p.e of 11,000. The present WWTP was first put into service in 2005. It operates an activated sludge process followed by final settlement and includes screening, grit removal and phosphorus removal. The plant also operates a sludge treatment facility consisting of sludge thickening and dewatering.

The wastewater from the agglomeration is collected by a series of six interconnecting pumping stations. These pumping stations, together with the gravity sewer network and rising mains deliver sewage to the WWTP. Approximately 85% of the wastewater arising in the agglomeration is domestic in origin. The primary discharge occurs into the River Suir (SWOO1) and is located at 242255E, 121343N. There are no secondary discharges from the agglomeration.

The report presented below details the monitoring reports for influent and effluent loading at the WWTP along with the ambient upstream and downstream monitoring of the receiving water.

1.2 Executive Summary

The Carrick-on-Suir wastewater treatment plant has continued to operate effectively in this reporting period. The treatment plant is operated and managed on behalf of South Tipperary County Council by AECOM Ltd under a 20 year DBO contract agreement.

A review of the final effluent results and compliance with the Emission Limit Values set out in licence shows that there was no exceedence of the ELV for BOD which had an average effluent value of 3.16 mg/l against an ELV of 15 mg/l while Suspended Solids and COD had effluent values of 4.3 mg/l and 18.7 mg/l against ELV's of 35 mg/l and 125 mg/l respectively. The average effluent value for Ammonia was 0.33 mg/l against an ELV of 5mg/l. The average effluent values for TN and TP were 5.91 mg/l and 0.44 mg/l against ELV limits of 15mg/l and 5 mg/l respectively.

As the discharge licence was only issued in December 2012 it was not possible to test for Ortho P. However this parameter will be tested and reported on for future AER reports.

The total flow for the year was 1,036,200 m³ while the current flow weighted average influent BOD to the plant is 143.8 mg/l giving a current pe loading of the plant of 6,785 pe. This compares with a plant design of 11,000 pe.

The average flow for the year was 2831 m³ /day against a plant design of 7,518 m³/day (at 3dwf) which indicates that the plant is operating within it's hydraulic and treatment capacities.

A review of the ambient monitoring results for upstream and downstream of SW001 indicates that the discharge is having no adverse impact on the quality of the receiving waters.

The percentage reductions shown in the treatment efficiency report summary table No 6 show that reductions of 98%, 94.4% and 98% were achieved in BOD, COD and Suspended Solids respectively.

A reduction of 98% was achieved in the Ammonia levels while nutrient removal efficiencies for TP and TN were 89% and 77.3 % respectively.

1.0 MONITORING REPORTS SUMMARY

2.1 Summary report on monthly influent monitoring

Table 1 below is a tabular presentation of the wastewater treatment plant influent monthly monitoring results for cBOD, COD, Suspended Solids, Total Nitrogen, Total Phosphorus, Ammonia and pH. Also set out below is the calculation of the pe equivalent load and flow weighted average BOD load for the WWTP.

Table 1: Waste water treatment plant influent monitoring results for 2012.

Date	Flow (m ³ /day)	cBOD 5d with nitrification inhib (mg/l)	Chemical Oxygen Demand (mg/l)	Suspended Solids (mg/l)	Total Nitrogen as N (mg/l)	Total Phosphorus as P (mg/l)	Ammonia as N (mg/l)	pH Value
10/01/2012	2423	113	228	145	23.5	3.88	15.6	7.6
07/02/2012	2001	190	291	173	28.3	4.32	19.6	7.5
06/03/2012	1262	365	714	454	44.8	7.52	29.7	7.5
24/04/2012	1693	150	254	124	30.8	4.42	24	7.3
01/05/2012	1890	253	695	405	37.9	5.98	20.1	7.2
12/06/2012	3043	120	241	228	20.2	3.3	11.6	7.4
03/07/2012	4290	95	227	303	14.1	2.62	6.7	7.5
08/08/2012	2168	125	246	109	25.3	3.46	15.6	7.5
04/09/2012	3531	70	186	71	18.6	2.4	11.2	7.5
02/10/2012	1913	230	394	245	26	4.35	16.6	7.4
06/11/2012	2228	123	254	149	23.7	3.29	14.4	7.5
11/12/2012	2370	123	250	113	24.6	3.39	13.4	7.5
Average	2401	154.9	332.	210	26	4	16.5	7.45

Calculation of the Population Equivalent load to the WWTP

The total influent for the year 2012 was 1,036,200 m³ per Table No below.

The flow weighted averaged influent BOD as calculated per Table 2 is 143.8 mg/l

Carrick-on-Suir population equivalent was determined by the following formula:

Total Influent Flow for 2012 x flow-weighted averaged influent BOD divided by (0.06x366x1000).

Therefore the PE = (1,036,200 x 143.8) / (0.06 x 366 x 1000) = **6,785**

Table 2: Calculation of the Flow weighted average BOD for 2012

Sample Date	Flow (m ³ /day)	cBOD (mg/l)	cBOD (Kg/day)
10/01/2012	2423	113	273.8
07/02/2012	2001	190	380.2
06/03/2012	1262	365	460.6
24/04/2012	1693	150	253.9
01/05/2012	1890	253	478.2
12/06/2012	3043	120	365.2
03/07/2012	4290	95	407.6
08/08/2012	2168	125	271
04/09/2012	3531	70	247.2
02/10/2012	1913	230	439.9
06/11/2012	2228	123	274
11/12/2012	2370	123	291.5
Total	28,812		4143.1

The Flow weighted average BOD is 4143.1 Kg x 1000 / 28,812 m³ = **143.8 mg/l**

Table 5: Carrick WWTP Primary discharge point daily flow recordings (m3/day) for 2012 as required under Schedule B (Monitoring) of the Discharge Licence.

Day	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1	2897	3433	1444	1268	1890	1930	4384	3323	3851	2978	2640	4640
2	2930	2224	1410	1424	3079	1102	3906	4118	3681	1913	2562	4268
3	4406	2070	1718	1638	1574	5887	4290	3817	3411	2568	2452	3601
4	3896	1851	1343	1340	1894	5130	5227	4019	3531	1992	2792	3396
5	3897	2646	1343	930	2137	5089	4600	3995	3272	1626.5	3834	4129
6	2645	1649	1262	1375	2452	3130	4350	3383	2524	1626.5	2228	3582
7	2821	2001	2093	2409	3941	6530	5586	3383	2589	1066	2028	2992
8	2686	2182	1661	2581	3352	6438	5586	2168	2007	2486	1477	2502.5
9	2997	2016	2277	2845	3051	5110	3409	2405	2127	1537	2703	2502.5
10	2423	3021	2578	3237	3735	4628	4122	1451	1478	1397	2428	2787
11	2608	3620	1976	2123	3429	3794	4720	2401	2797	2374	2333	2370
12	2837	2239	1731	2828	1721	3043	3688	2401	1788	2500	2333	2781
13	2684	1728	1638	1656	1021	4627	4354	3353	1705	1782	2840	4942
14	2728	1831	1365	1856	1667	3514	3925.5	2799.5	1853	1782	4170	3879
15	2472	2062	1785	1419	1247	6716	3925.5	2799.5	2009	2084	3452	5737
16	1949	1324	1054	1780.5	1443	5508	2847	4867	2549	2795	3848	4033
17	1893	1620	2630	1780.5	1260	6159	2473	4891	3667	4700	3502	3894
18	2042	1536	1566	2490	1739	5540	2785	4684	2057	4463	3082	3370
19	2510	1844	1460	1830	2212	4727	2980	4716	2878	4464	4760	4886
20	1948	1539	1630	1384	1236	4731	2980	4685	3364	3638	3851	4294
21	1617	1657	1016	2226	1709	6220	2794.5	4244	1911	2679	5137	4000
22	1950	2720	1835	1774	1457	4864	2794.5	4283	1708	1867	5426	6248
23	1977	2229	2068	1693	1457	4811.5	2163	4499	1318	1776	4500	3298
24	2411	2324	2152	1693	1414	4811.5	2296	3415	1632	1779	4295	3822
25	2939	2363	1441	2325	1226	4158	2307	4727	1328	1742	4295	4793.3
26	3698	1506	1740	1680	1000	3723	2184	4727	2293	1742	5334	4793.3
27	2700	1728	1366.5	2217	1575	3927	1323	3801	1600	1754	5653	4793.3
28	2325	1301	1366.5	1253	1445	4954	1720	4698	1424	1777	5575	4138
29	3169	1465	1496	1195	1090	3724	1803	4954	2008	2415	4262	5657
30	4206		1339	2277	1571	4122	1406	4293	1868	2465	4254	4731
31	3087		930		1051		2415	4090		2366		5009
	85348	59729	49784	56527	58024	138648	100929	113300	70228	69768	108046	125869

Total	1036200
Min	930
Max	6716
Ave	2831

2.3 Treatment Efficiency Report

Presented below in Table 6 is a summary of the efficiency of the treatment process including information for all the parameters specified in the licence.

Table 6: Treatment Efficiency Report Summary Table

	cBOD	COD	SS	TN	TP	Ammonia
Influent Mass Loading (Kg/day)	438.5	939.9	594.5	73.6	11.3	46.7
Effluent Mass Loading (Kg/day)	8.95	52.9	12.2	16.7	1.25	0.93
% Efficiency Reduction	98%	94.4%	98%	77.3%	89%	98%

2.4 Treatment Capacity Report

Presented below in table 7 is a summary of the current and remaining treatment capacity of the treatment process.

Table 7: Treatment Capacity Report Summary Table

Hydraulic Capacity – Design	7,518 m3/day @ 3dwf
Hydraulic Capacity – Current Loading	2,831 m3 / day
Hydraulic Capacity – Remaining	4,687 m3/ day
Organic Capacity – Design (pe)	11,000 pe
Organic Capacity – Current Loading (pe)	6785 pe
Organic Capacity – Remaining (pe)	4215 pe
Will the capacity be exceeded in the next 3 years	No

2.5 Ambient monitoring summary

The ambient monitoring results for the parameters as set out in Schedule B of the licence is presented in Table No 8 (Upstream) and Table No 9 (Downstream) below. Also presented in Table 10 is a summary of the ambient monitoring. The monitoring results show that the discharge is not having any significant impact on the quality of the receiving water.

Table 8: Ambient monitoring at Asw-iu upstream of SW1 Carrick-on-Suir

Sample Date	Ammonia	BOD	DO	Ortho P	pH	Temp	TN
7/2/2012	0.02	1	10.8	0.02	8	9.2	3.32
16/4/2012	0.01	1	11.4	0.01	8.5	10.1	2.52
26/6/2012	0.01	1.5	9.4	0.03	8	15.9	2.87
23/8/2012	0.02	1	10.1	0.03	8	15	3.37
8/11/2012	0.02	1	10.5	0.03	8.1	10.3	3.34
13/12/2012	0.09	1	11.3	0.03	8.1	6.7	3.13
Average	0.032	1.25	10.6	0.028	8.1	11.2	3.1
Max	0.09	1.5	11.4	0.03	8.5	15.9	3.37
95% tile	0.076	1.475	11.3	0.03	8.4	15.67	3.36

Table 9: Ambient monitoring at Asw-Id downstream of SW1

Sample Date	Ammonia	BOD	DO	Ortho P	pH	Temp	TN
7/2/2012	0.02	1	11	0.02	8	9.4	2.91
16/4/2012	0.01	1	11.8	0.01	8.4	9.9	2.53
26/6/2012	0.02	1.3	9.61	0.03	8	16.3	2.19
23/8/2012	0.02	1	9.82	0.03	8.1	15.3	2.58
8/11/2012	0.01	1	11.7	0.03	8.2	9.7	2.58
13/12/2012	0.09	1	11.5	0.03	8.1	6.8	2.88
Average	0.04	1.15	10.89	0.03	8.13	11.23	2.61
Max	0.09	1.3	11.7	0.03	8.4	16.3	2.91
95% tile	0.08	1.29	11.7	0.03	8.35	16.05	2.90

Table 10: Ambient Monitoring Summary Table

Ambient Monitoring Point from WWDL	Irish Grid Reference	EPA Feature Coding Tool code	Is discharge Impacting on water quality
aSW-IU upstream of SW1	242120 E, 121370 N	RS16S022950	No
aSW-ID downstream of SW1	242429 E, 121346 N	RS16S022960	No

2.4 Data and reporting requirements under the Urban Waste Water Treatment Directive

It is confirmed that the annual urban wastewater information for agglomerations and treatment plants with a population equivalent greater than 500 for the year 2012 was submitted to the EPA in electronic form in 2012.

2.5 Pollutant Release and Transfer Register (PRTR)

Submission of the AER/PRTR for 2012 for the Carrick-on-Suir WWTP is not required, as instructed by the Agency (EPA), as the Discharge Licence for Carrick-on-Suir was only issued in December 2012.

3.0 OPERATIONAL REPORTS SUMMARY.

3.1 Complaints summary

There were no complaints of an environmental nature related to the discharge to water from the Carrick-on-Suir Wastewater treatment Plant in 2012.

Table 11: Complaints

Number	Date and Time	Nature of Complaint	Cause of Complaint	Actions taken to resolve issue	Closed (Y/N)
N/A	N/A	None	None	N/A	N/A

3.2 Reported Incidents Summary

There was no recorded incidents in relation to the Carrick-on-Suir Wastewater Treatment Plant in 2012.

Table 12: Incidents Summary

Date and Time	Incident Description	Cause	Corrective Action	Authorities Contacted	Reported to EPA	Closed (Y/N)
N/A	None	None	N/A	N/A	N/A	N/A

Table 13: A summary of the incident details as required in the EPA reporting guidelines is set out below

No of Incidents in 2012	None
Number of Incidents reported to the EPA via EDEN in 2012.	None
Explanation of any discrepancies between the Two numbers above.	N/A

4.0 INFRASTRUCTURAL ASSESSMENT & PROGRAMME OF IMPROVEMENTS

4.1 Storm Water Overflow Identification and Inspection Report

This report shall be submitted to the Agency as part of the second AER, due in 2014.

4.2 Report on progress made and proposals being developed to meet Improvement Programme requirements.

This report shall be submitted to the Agency as part of the second AER, due in 2014.

4.3 Sewer Integrity Risk Assessment

The sewer integrity risk assessment for the Carrick-on-Suir Agglomeration will be carried out in 2013 and reported on in the AER due in 2014.

5.0 ENVIRONMENTAL LIABILITY AND FINANCIAL PROVISIONS

5.1 Environmental Liabilities and Financial Charges

The licensee has in place funding to meet the financial charges associated with the monitoring and enforcement costs payable to the Agency (EPA). These payments are made on an annual basis.

The current annual cost for the Carrick-on-Suir Agglomeration is €2,968.

The licensee shall, subject to assessment and funding availability provide an Environmental Liabilities Risk Assessment Report to the Agency as part of the 2nd AER due in 2014

6.0 RISK BASED ASSESSMENTS (Priority Substances)

6.1 Priority Substances Assessments

The requirement for a risk based assessment to identify the possible presence of priority substances will be reviewed and reported upon to the Agency by the licensee as part of the

2ND AER report due in 2014.

7.0 CERTIFICATION & SIGN OFF

I certify that this Annual Environmental Report (AER) for the reporting year 2012 for the Waste Water Discharge Licence No D0148-01 in respect of the Carrick-on-Suir Agglomeration is representative and accurate.

Signed:

Dated:

Mr Jimmy Harney

Acting Director of Services

Environment and Water Services

South Tipperary County Council